

HB 2667 Energy Savings in Public Buildings Year 1 report

Goal: Reduce energy consumption by 25% in WV Public Buildings by 2030

Prime deliverable: strategic plan for long-term sustainability of energy savings program.

Summary

Utility costs are the 2nd largest expense of an agency's operating budget. Conservatively, these costs amount to between \$100-130M to the state of WV. Just the practice of annual benchmarking alone can see a reduction of 2-4%, while addressing low and no cost opportunities, and bringing our building stock in line with the national average these savings can reach 10-20%; Meaning, a savings potential of \$20-30Million. In addition, to lowering operating and maintenance costs, buildings that are consistently benchmarked have higher resale values, lower insurance rates, as well as being safer and healthier for the tenants.

In March 2021, the West Virginia State Legislature passed House Bill 2667 directing the establishment of a benchmarking and disclosure program for state buildings, audit of utility accounts, and inventory of deferred maintenance. The bill also created an energy use reduction goal of 25% by 2030, relative to 2018 levels. To meet this objective, it directed development of a state building energy savings program, including an Energy Savings Performance Contract (ESPC) program to cost-effectively achieve guaranteed energy savings.

As of the end of the 2021 calendar year, the WVOE has completed the benchmark of nearly 600 buildings across 3 state agencies, 2 higher education institutions, and 36 county school systems. Total annual utility costs benchmarked to date is approximately \$26 million, with a potential annual savings of nearly \$6 million.

Objective 1: Inventory and benchmark state owned and operated buildings, beginning with Dept of Administration's portfolio. Identify energy intense buildings. Establish database and dashboard.

Goal: Target of 600 building per year.

Metrics: # of buildings completed; SqFt benchmarked; \$ in potential savings identified

Timeframe: 5 years from July 2021. 17% complete.

Obstacle: Agency response and access to data

Agency	Utility Cost/ \$million	Deferred Maintenance Costs/ \$million	# of meters	# of Bldg	SqFt million	EUI / Nat'l Avg	Cost /sqft\$	Potential Savings
Dept of Admin	\$3.5	\$36.4	46	24	11	70 / 53	.024	\$722,000
DHHR	\$2.5	TBD	39	12	1.8	108 / 100	.013	\$204,000
Corrections	\$5.1	TBD	116	28	2.8	123 / 70	.015	\$2,100,000
WV K12 Schools	\$14.9	TBD	TBD	520/711	23	64 / 48	.014	\$2,900,000
Total	\$26,000,000		256	584	38.6		.0165	\$5,926,000

Department of Administration: Potential annual savings is **\$722,000**. Of those buildings benchmarked in 2021, the most efficient buildings are: Bldg# 20, in Charleston; Bldg# 32 in Huntington; and Bldg#86 in

Charleston. The buildings with the most potential for improvement are Bldg# 3 and 5 in Charleston, and Bldg#54 in Fairmont.

Department of Corrections: Potential annual savings is **\$2,100,000**. The most efficiently functioning facilities this year were the Lakin Correctional Center; James Tiger Morton Juvenile Center and The Potomac Highlands Regional Jail. Those facilities that showed to be less efficient include the Northern Regional Jail, Denmark, Vickie Douglass and Huttonsville.

Department of Health and Human Resources: Potential savings is **\$204,000**. DHHR facilities are fairly efficient overall, compared to the national average. The best performing locations are Lakin, Mildred Mitchell-Bateman and Jackie Withrow Hospitals. Those with the most potential for improvement are the John Manchin Senior Health Center, Offices of the Chief Medical Examiner and Laboratory Services.

K-12 Schools: Potential annual savings is **\$2,900,000**. Barbour County is the best overall in the state with a very engaged treasurer and facility manager. Berkeley has a program with an engineering firm that has lowered energy use from 73 to 45 EUI (38%) in 4 years, saving millions. Those counties that have the most potential to save are Monongalia and Kanawha Counties. Kanawha County is currently in the middle of retrofitting 17 schools and has recently adopted, and is enforcing, the ASHRAE 50% AEDG for all projects and should see significant reductions, in the near future. These programs are full comprehensive district wide engineered projects with the 20 EUI or net zero goal in mind.

Objective 2: Catalog deferred maintenance of state buildings, and prioritize those with the most savings potential; starting with DOA portfolio. Target of 600 buildings per year.

Metrics: # of buildings completed; total assessment of maintenance needs per building.

Timeframe: 5 years from July 2021. 5% Complete. Data collected is not sufficient enough to report.

Obstacle: Late project start due to COVID restrictions and getting resources into place. Also, slow agency and/or utility response and restricted access to data

Discussion: As part of an ongoing partnership with WVU's Statler School of Engineering, two teams of five students each conducted energy audits for the West Virginia Department of Agriculture's Guthrie Center. The center contains 22 buildings that are on one electric meter. Student teams looked at buildings 2, 5, and 17 to audit and determine the peak HVAC and electrical demand. Buildings 2 and 5 were modeled to estimate the size of an emergency generator needed to improve sustainability and reliability. A 250 KW natural gas generator was recommended. The teams also designed a metering system for the buildings to determine the energy usage for benchmarking purposes. Another team designed a new HVAC system for building 17. It was found to have poor temperature control and was found to be undersized. A new split system heat pump system was designed. Presentations to WVDA officials were made in late April 2021

Objective 3: Audit all state electric and gas accounts for discrepancies, errors and orphaned meters. beginning with DOA portfolio. Target of 5000 accounts per year.

Metrics: # of accounts audited; SqFt benchmarked; \$ in potential savings Identified

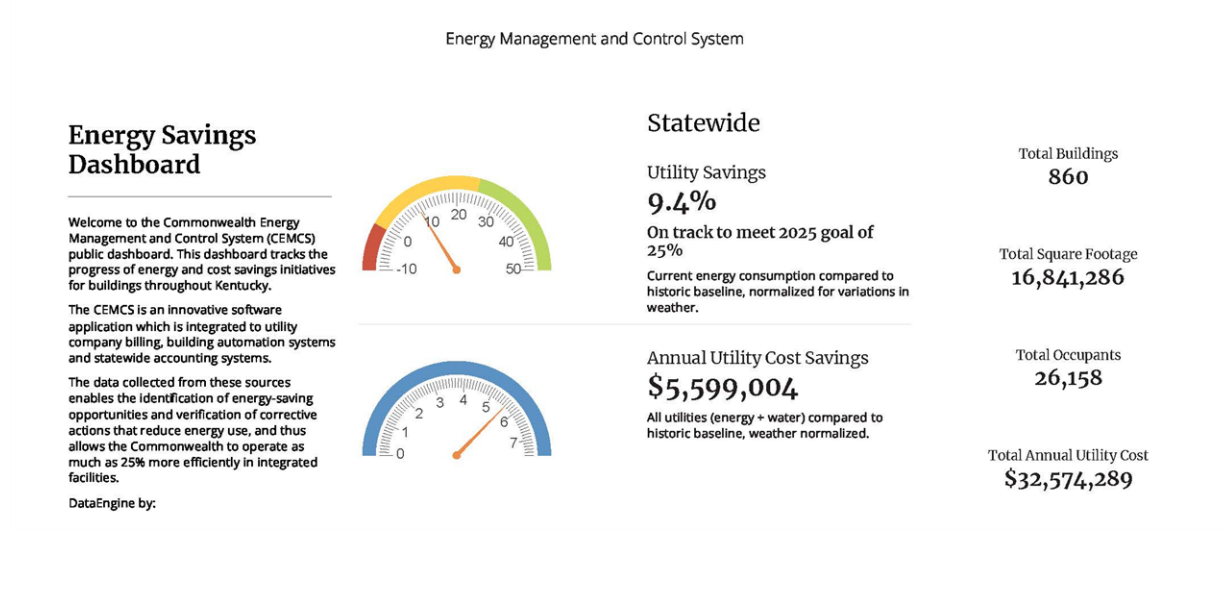
Timeframe: 5 years from July 2021. 5% Complete.

Obstacle: Late project start due to COVID restrictions and getting resources into place. Also, slow agency and/or utility response and restricted access to data

Discussion: Several digital platforms were tested by WV Energy Office staff.

<u>Platform</u>	<u>Top Pros</u>	<u>Top Cons</u>
Caspio	Customized to meet individual needs	Price
Dude Solutions	Full automation of bills once collected	Yearly subscription fee
Energy Print	Excellent layout of reporting tools	No automatic transfer to
Energy CAP	Very user friendly and easier to use	Portfolio Manager
Jade Track	Full technical support and training	Does not collect bills from
eSight Energy	Tracks down orphaned meters	utility companies

These programs are too expensive and really do not provide the function needed. WVOE will be working with the Kentucky Energy Office and WV University to develop an in-house program that will work for, and grow with, this evolving effort. See sample dashboards below.



Energy Management and Control System

Performance from Baseline: ● Poor ● Neutral ● Good

Finding a building by agency...

Map View List View

Description	Perf.	Ener...	Sq...	Address	Cou...	City	Agency
475 Coffee Tree Rd	●		6,820	475 COFFEE TREE RD	FRANKLIN	FRANKFORT	FINANCE-OFFICE OF THE SECRETARY
ACTC College Dr Academic-LRC	●		34,159	1400 COLLEGE ST	BOYD	ASHLAND	Ky Community Technical College System
ACTC College Dr Child Development C...	●		13,000	RAMEY & HARLAN STREETS	BOYD	ASHLAND	Ky Community Technical College System
ACTC College Dr Cosmetology Bldg	●		6,060	1897 OAKVIEW ROAD	BOYD	ASHLAND	Ky Community Technical College System
ACTC College Dr Goodpaster Bldg	●		35,300	1400 COLLEGE ST	BOYD	ASHLAND	Ky Community Technical College System
ACTC College Dr Main Bldg	●		149,400	1400 COLLEGE ST	BOYD	ASHLAND	Ky Community Technical College System
ACTC East Park I	●		43,000	902 TECHNOLOGY DRIVE	BOYD	ASHLAND	Ky Community Technical College System
ACTC Roberts Auto Body-Mechanics	●		16,224	4700 ROBERTS DR	BOYD	ASHLAND	Ky Community Technical College System

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Objective 4: Create state Guaranteed Energy Savings Contracting Program.

Timeframe October 2021.

Metrics: Established working group; prequalified ESCO process; Standardized documents; tracking and reporting process; program administration; program funding.

Obstacle: Late project start due to COVID restrictions and getting resources into place. Also, slow agency and/or utility response and restricted access to data.

Discussion: There are two processes that need to be developed, one for those agencies that are required to follow WV Purchasing Procedures and one for those that are exempt. Template program “in a box” is near complete. This packet addresses the key areas of a successful program.

- [Enabling Legislation](#)
- [Gubernatorial Support](#)
- [Consensus Decision-makers](#)
- [Pre-Qualified Vendors](#)
- [Standardized Documents](#)
- [Program Funding](#)
- [ESC Chapters](#)
- [Benchmarking](#)
- [Recognition](#)
- [Program Administration](#)

Gubernatorial support is important because it conveys priorities to state agencies and institutions, assigns responsibility and directs GESPC consideration prior to capital budget requests. Continuous support is critical to maintain program consistency and allows a program to build upon its success. GESPC is a non-traditional procurement and finance process. A successful program needs specific processes and tools that reflect cooperative support among appropriate authorities of government. These include, but are not limited to:

- Procurement and contracting expertise to ensure that the process follows applicable GESPC procurement rules;
- Budget and finance to establish a means to repurpose the utility and operational savings budget dollars to repay the capital that funds the upfront construction; and
- Legal expertise to develop a standard document set (RFQ, RFP, ESA, etc.) that recognizes that GESPC is substantially different from traditional public construction and that facilitates the development and implementation of GESPC projects

Recommendations

1. **Objective 1:** Buildings identified in objective one should receive an impartial energy assessment through the WVOE’s partnership with the West Virginia University’s Industrial Assessment Center.
2. **Objective 2:** Convene facilities working group to begin long term strategic planning to address deferred maintenance.
3. **Objective 3:** State agencies should make requests for utility data a priority. This would be made easier if the legislature or public service commission directs utility companies to release data directly to the WV Office of Energy.
4. **Objective 4:** Establish prequalified contractor process that is recognized by all state agencies. WVOE will host performance contracting experts to assist in setting up a new performance contracting program. It is vital for fiscal and legal decision makers to be present and supportive.